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# Update on *Water Quality*

*United States Department of Agriculture*

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## Progress Update #7, August 10, 1990

### The Data and Evaluation Committee

The Data and Evaluation Committee of the USDA Working Group on Water Quality is co-chaired by the Economic Research Service (ERS) and the National Agricultural Statistics Service (NASS). Two basic questions guide the Commit-

tee's efforts: (1) What are the levels and composition of pesticide and fertilizer use? (2) What are the economic and environmental implications of various practices and programs to reduce potential water quality problems?

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### Activities Planned

Three data collection activities are underway to help answer questions associated with aggregate chemical-use patterns. These data are important not only to the President's Water Quality Initiative, but also to USDA's Food Safety Data Initiative, benefits assessments, and other pesticide-related activities. The planned data activities are a cropping practices

survey, a whole-farm chemical use and economic survey, and area study surveys.

In addition to the surveys, the Committee is exploring ways to coordinate related data from the Research and the Education and Technical Assistance components of USDA's Water Quality Program to assist in practice and program evaluation.

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### Cropping Practices Survey

Beginning this summer, NASS will survey producers of major field crops, including corn, soybeans, wheat, cotton, rice, and potatoes. Major items of interest include pesticide- and fertilizer-use levels by crop, acreage, yields, method of application, and tillage and planting operations. Fertilizer and pesticide

information will reveal active ingredients used. Future plans are to extend coverage to include other field crops such as peanuts, tobacco, and sorghum. The plan is to report on agricultural chemical use at a State level of statistical reliability beginning in early 1991.

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### Whole-Farm Survey

The whole-farm chemical-use and economic survey will provide data for economic analysis of fertilizer and pesticide-use policies. Using whole-farm data, analyses can be conducted on crop substitution, input substitution, and input-crop substitution opportunities under different chemical-use situations.

In 1990, a survey of pesticide use on vegetable crops will be conducted in five States: Arizona, California, Florida,

Michigan, and Texas. The survey will cover about 80 percent of U.S. fresh-market vegetable production. Plans call for surveying fruit and nut producers in all major fruit- and vegetable-producing States in 1992.

The whole-farm survey will collect data permitting a better understanding of production practices, decisions, and responses for assessing the economic trade-offs in pesticide-use adjustments.

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## Area Study Surveys

Surveys of selected geographic areas will help clarify the linkages between fertilizer and pesticide applications, environmental characteristics, and potential water quality concerns. Comprehensive farm information will be tied to natural resource data.

The surveys will be conducted by NASS and ERS in close cooperation with other

USDA agencies and others, including the U.S. Geological Survey and Environmental Protection Agency. The first area study site is the Delmarva peninsula. Other area studies are under consideration to cover the range of major agricultural activities and natural resource conditions.

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## 1989 Cotton Survey

As a pilot test, NASS and ERS conducted a survey of cotton producers in 14 Southern and Western states in the fall of 1989. Information from the survey provides a comprehensive accounting of field applications of pesticides and fertilizers on the 1989 cotton crop. The survey also provided an opportunity to test data collection procedures and begin the accumulation of chemical-use data that will cover all major field crops, vegetables, fruits, and nuts by 1993.

Detailed analysis of the survey, which accounted for production practices on 10.2 million cotton acres, is currently underway within ERS. Results will be released as studies are completed. Some highlights of the survey:

- Ninety-eight percent of the surveyed acreage received one or more applications of pesticides—herbicides, insecticides, fungicides, dessicants/defoliants, and growth regulators—in 1989.
- The proportion of cotton acres fertilized ranged from 65 percent in the Southern Plains to over 98 percent in the Delta and Southeastern states.
- Nearly 60 percent of cotton farmers use commercial scouting programs as part

of their pest management programs.

Scouting involves systematic visits to cotton fields to determine insect presence and population levels followed by specific control measures as needed. This practice was most intensively used in the West, with an average of 25 field visits.

- About 40 percent of the cotton acreage contained a well within the surveyed field, and three-quarters of the acreage was within one-half mile of a well. In most cases, either the well had not been tested for potential chemical contamination or respondents did not know whether testing had been done. Just over 20 percent of the acreage was within 1 mile of a river or stream, and nearly half was within 1 mile of a pond or natural lake.

Future analyses will explore the possible relationship between chemical applications on cotton and natural resource conditions related to water quality. For example, the nature of fertilizer and pesticide use in relation to the vulnerability of an area to groundwater leaching and surface runoff is of particular interest.



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